Synopsis.]

RAILWAY FREIGHT TRAFFIC STATISTICS.

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Within the last few years statistics have come to be valued as a vital necessity to the successful operation of our railways.

Perhaps the Lake Shore & Michigan Southern Railway, with its eastern terminus at Buffalo, at the foot of the Great Lakes, and its western terminus at Chicago, the head of the Great Lakes, traversing six great states, with branches largely exceeding in mileage its main line, has as great a variety of traffic as any railway in this country. While it has but 1454 miles of road (less than one per cent of the mileage of the United States) it handled, in 1892, 13,643,747 tons of freight and 5,846,755 passengers. As I myself have kept its statistics for thirty-three of its forty-one years, and have made up and issued thirty-three consecutive annual reports (1860–92), I shall confine the inquiry to the statistics of that railroad.

RATES.

The average rate per ton per mile can be had for thirty-nine years, since 1853. During this period, in 1868, the Bessemer steel rail was introduced. Notice the tendency of rates from 1868, as shown in the following table: —

Average Rate per Ton per Mile of the Lake Shore & Michigan Southern Railway.

Years.	Cents.	Years.	Cents.	Years.	Cents.
1854	3.510	1867	2.427	1880	.750
1855	3.210	1868	2.336	1881	.617
1856	2.960	1869	1.714	1882	.628
1857	2.740	1870	1.504	1883	.728
1858	2.380	1871	1.391	1884	.652
1859	2.292	1872	1.374	1885	.553
1860	2.157	1873	1.335	1886	.639
1861	2.092	1874	1.180	1887	.670
1862	2.099	1875	1.010	1888	.636
1863	2.296	1876	.817	1889	.664
1864	2.833	1877	.864	1890	.626
1865	2.903	1878	.734	1891	.628
1866	2.476	1879	.642	1892	.599

This table shows that the rate per ton per mile for 1892, a trifle under six mills, was but —

80	per cent	of the	rate for	1880
40	"	"	"	1870
28	"	"	"	1860
17	"	"	"	1854

When a railroad moves 100 tons of average freight one mile for a little less than 60 cents it would seem as if the bottom had been reached. The great majority of the railroads in the United States could not meet their fixed charges with an average rate of six, or even eight, mills per ton per mile.

With a considerably higher average rate in 1892 (a little less than one cent per ton per mile, .967), all the railroads of the United States, out of gross earnings aggregating $1,205,272,023, paid but $83,336,811 in dividends on $4,920,555,225 capital stock, less than 1.7 per cent, and 1892 was a very prosperous year. A further reduction in the average rate per ton per mile of only one mill, 10 per cent, would cut down the freight earnings of all the railroads in the United States $84,448,197, thus obliterating the aggregate dividends of 1892 ($83,336,811).

This close margin thus shows the vital necessity of scrutinizing freight statistics.

COMMODITY STATISTICS.

To an intelligent management of a railway, seeking how and where to increase its traffic, commodity statistics are of inestimable value.

The Lake Shore freight traffic is divided into 14 commodities, or general heads. I here give the figures for 1870 and for 1892, showing the growth of each commodity in 23 years.

	Tons, 1870.	Tons, 1892.	Per Cent Increase.
Coal and Coke	215,997	3,692,551	1,610
Iron Ore (commenced in 1876)	.....	1,337,901	.....
Stone, Sand, and Lime	95,521	1,137,583	1,091
Pig, Bloom, and R. R. Iron	76,012	283,503	273
Other Iron and Castings	66,778	635,312	851
Petroleum	260,959	427,419	64
Total Minerals	715,267	7,514.269	951
Grain	451,431	1,234,677	173
Other Agricultural Products	149,031	375,842	152
Flour and Flour Mill Products	327,812	470,966	44
Provisions	132,645	278,313	110
Animals	276,531	561,597	103
Total Food	1,337,450	2,921,395	118
Lumber and other Forest Products	334,581	924,901	176
Manufactures	199,547	434,374	118
Merchandise and other Articles	391,880	1,848,808	372
Grand Total	2,978,725	13,643,747	358

This table shows at a glance how poor is the railroad that has to depend almost entirely upon farm products for its traffic.

STATION STATISTICS.

Without these the general statistics of a railroad would be of no account. The President or Manager wants to know the springs or sources, which combined make the mighty torrent of a certain kind of freight, and the same of passengers.

While the Lake Shore & Michigan Southern has 319 passenger stations, 90 per cent of its passenger earnings comes from 57 stations. While it has 270 freight stations, 96 per cent of its freight earnings comes from 76 stations.

The traffic and accounts of all these stations has been kept for 33 years. Each one has its peculiarities. A car load of

Lake Superior iron ore from Ashtabula Harbor would be as great a curiosity in Chicago as would a car of dressed beef from Chicago be at Ashtabula Harbor; and so each station must have its own facilities in buildings, tracks, etc., and the extent of these must be gauged largely upon statistics, not only of its tonnage, but the kind of freight that makes up that tonnage. As with freight so with passengers. Growing, improving stations must be served with more trains, and decaying, declining stations with less.

Neither the student of industrial questions nor the official statistician can have a higher appreciation of the importance of accurate and comprehensive statistics than the manager of a large railway corporation.

The complete text of the above paper will be found in the *Railway Review*, Sept. 30, 1893.